

We claim:

1. A method for producing a chip-substrate connection, which comprises:

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performing one of alloying and brazing a chip to a substrate using a solder containing at least two components with at least two metal-containing constituents including a first constituent X containing a precious metal and a second constituent Y being consumed in a soldering operation by one of reacting and being dissolved by materials being joined, and the solder having a hypereutectic concentration of the second constituent Y.

2. The method according to claim 1, which comprises providing the second constituent Y of the solder with tin having the hypereutectic concentration.

3. The method according to claim 1, which comprises using a gold-tin compound (AuSn) as the solder with a hypereutectic Sn concentration.

4. The method according to claim 3, which comprise providing the gold-tin compound a tin concentration being greater than 20% by weight.

5. The method according to claim 1, which comprises depositing the solder on a rear side of the chip.

6. The method according to claim 5, which comprises providing the solder with a composition by weight of the first constituent X to the second constituent Y of 70 to 30.

7. The method according to claim 5, which comprises applying the solder with a thickness of from about 1 μm to about 2 μm to the rear side of the chip.

8. The method according to claim 1, which comprises using gold as the precious metal.

9. The method according to claim 1, which comprises depositing the solder on a rear side of the chip by sputtering.

10. The method according to claim 5, which comprises applying the solder by sputtering with a thickness of about 1.5 μm to the rear side of the chip.

11. A solder for use in producing a chip-substrate connection, comprising:

~~a solder composition containing at least two components with at least two metal-containing constituents including a first constituent X formed of a precious metal and a second constituent Y being consumed during a soldering operation by one of reacting and being dissolved by materials which are to be joined, and said solder composition has a hypereutectic concentration of said second constituent Y.~~

12. The solder according to claim 11, wherein said second constituent Y contains tin with a hypereutectic concentration.

13. The solder according to claim 11, wherein said precious metal is gold.

14. The solder according to claim 11, wherein said solder composition has a composition by weight of said first constituent X to said second constituent Y of 70 to 30.

Sub A1) 15. A semiconductor component, comprising:

a solder containing at least two components with at least two metal-containing constituents including a first constituent X being formed of a precious metal and a second constituent Y being consumed during a soldering operation by one of reacting and being dissolved in materials which are to be joined, and

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cont. } said solder having a hypereutectic concentration of said
second constituent Y;

a substrate; and

a semiconductor chip secured to said substrate by one of
alloying and brazing using said solder.

16. The semiconductor component according to claim 15,
wherein said solder contains a gold-tin compound (AuSn) with a
hypereutectic Sn concentration.

C O N F I D E N T I A L

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